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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

RIDEAPP, INC.,

Plaintiff,

v.

LYFT, INC.

Defendant.

Case No. 4:18-CV-07152-JST

PLAINTIFF RIDEAPP, INC.'S OPENING CLAIM CONSTRUCTION BRIEF

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I. INTRODUCTION

The patent in suit, U.S. Patent No. 6,697,730 (Dkt. 88-1; referred to herein as the "'730 Patent"), claims a system that integrated then-nascent technologies into a better, more efficient and useful transit system. The system included GPS technology, wireless data service used by passengers and drivers, a central[1] assigning system, and secure payment technology.

Lyft offers unduly narrow constructions or none at all, offering constructions that improperly import limitations from some embodiments and exclude other embodiments.

Lyft claims that the patent claims are hopelessly indefinite. RideApp's Expert, David Yen, disagrees.

II. BACKGROUND

A. The Inventions of the '730 Patent

The '730 Patent discloses a communications and computing based transit system that employs wireless communications, GPS or similar location technology, and digital computers programmed to perform the specific algorithms that are disclosed in the specification. The specification discloses in detail the many advantages that Prof. Dickerson perceived would be realized by implementing such a system, including (1) reduced wait times, (2) reduced transit time uncertainty, (3) minimized vehicle backtracking, (4) communication among the passenger, driver, and system, (5) a convenient payment system for passenger transportation vehicle usage, and (6) enhanced passenger and driver security.

B. The Petitions for IPR and PTAB's Decisions

Lyft filed its IPR arguing invalidity over specified prior art.

Lyft was obliged to articulate proper claim constructions for the asserted claims. Lyft suggested the claims are indefinite and, in the alternative, offered several constructions that failed to point to the essential structure set forth in the patent.

[1] The patent uses the term "central data system" when the "central assigning system" is interfaced with one or more databases. *See* '730 Patent, FIGS. 2, 3, 9.

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Although RideApp, as patent owner, was not required even to respond, RideApp submitted a Preliminary Response. RideApp pointed to numerous aspects of its disclosure, including algorithms, that Lyft ignored that were essential to the invention of the '730 Patent.

The PTAB concluded that Lyft failed to articulate sufficient structure such that the PTAB was not able to compare the '730 Patent to the prior art. The PTAB attempted its own construction without the benefit of a non-preliminary response from RideApp or its expert.[2] The PTAB concluded that it could not, by itself, find sufficient structure to support the claims and that "Petitioner has not shown a reasonable likelihood that it will prevail with respect to unpatentability." *Lyft Inc. v. RideApp, Inc.*, Case IPR2019-00671, Paper No. 12 at 15 (P.T.A.B. Aug. 12, 2019) ("PTAB Decision"), attached as Ex. 1.

III. LEGAL PRINCIPLES

A. Claim Construction

Claim construction is a question of law. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 384-85 (1996). A court must construe a patent's claims in order to resolve the factual question of infringement. *Id.*

1. Intrinsic Evidence is the Best Guide to the Claims' Meaning

It is axiomatic that the patent claims define the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005). Claim construction begins with the words of the claims. *MSM Investments Co. v. Carolwood Corp.*, 259 F.3d 1335, 1338-39 (Fed. Cir. 2001).

The patent specification and prosecution history are "intrinsic" evidence of the meaning of the claim terms. The specification is "the single best guide to the meaning of a disputed term." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005). Understanding the problems that inventors were seeking to solve is often useful. *Bates v. Coe*, 98 U.S. 31, 38 (1878) ("[I]n case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the

[2] The PTAB is criticized for this practice. *See, e.g.*, "Are PTAB Non-Institution Decisions Based on Indefiniteness Defensible post-SAS?" https://www.lexology.com/library/detail.aspx?g=ce1855c8-9a9a-4a78-a5b4-425cc0f0331d.

specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims.").

Extrinsic evidence may also guide claim construction, but it may not be relied upon to vary the clear meaning of claim terms. *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1328 (Fed. Cir. 2008). Because courts evaluate definiteness from the perspective of someone skilled in the relevant art at the time the patent was filed, expert testimony may be helpful in evaluating definiteness. *See, e.g., Dow Chemical Co. v. Nova Chemicals Corp.*, 809 F.3d 1223, 1225 (Fed. Cir. 2015).

2. Means-Plus-Function Claims.

Means-plus-function claiming occurs when a claim is drafted in a manner that invokes 35 U.S.C. § 112, ¶ 6 ("Section 112"). Section 112 provides:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, ¶ 6 (2006). In construing functional claims, a court must first determine the claimed function and then identify the corresponding structure from the specification that performs that function. *Baran v. Medical Device Tech., Inc.*, 616 F.3d 1309, 1316 (Fed. Cir. 2010). The functions should be expressly set forth in the claims. *JVW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1331 (Fed. Cir. 2005).

For means-plus-function limitations where the disclosed structure is a computer programmed to implement an algorithm, the patent must disclose enough of an algorithm to provide the necessary structure under 35 U.S.C. § 112 ¶ 6. *See Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008). The patentee may express this algorithm in any understandable manner, including as a flowchart, so long as sufficient structure is disclosed. *Id.* The Federal Circuit "does not impose a lofty standard in its indefiniteness cases." *Id.* at 1341. Sufficient structure must simply "permit one of ordinary skill in the art to 'know and understand what structure corresponds to the means limitation'" so that he may "perceive the bounds of the invention." *Id.* at 1340-41.

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"A challenge to a claim containing a means-plus-function limitation as lacking structural support requires a finding, by clear and convincing evidence, that the specification lacks disclosure of structure sufficient to be understood by one skilled in the art as being adequate to perform the recited function." *Eon Corp. IP Holdings, LLC v. Aruba Networks, Inc.*, 62 F. Supp. 3d 942, 948 (N.D. Cal. 2014) (citing *Intellectual Prop. Dev., Inc. v. UA-Columbia Cablevision of Westchester, Inc.*, 336 F.3d 1308, 1319 (Fed. Cir. 2003)). When construing a means-plus-function claim, "a court may not import into the claim structural limitations from the written description that are unnecessary to perform the claimed function." *Acromed Corp. v. Sofamor Danek Group, Inc.*, 253 F.3d 1371, 1382 (Fed. Cir. 2001). When multiple embodiments in the specification correspond to the claimed structure, proper application of Section 112 generally reads the claim element to embrace each of those embodiments. *Versa Corp. v. Ag-Bag Intern. Ltd.*, 392 F.3d 1325, 1329 (Fed. Cir. 2004).

B. A Person of Ordinary Skill in the Art

The skilled artisan to whom the '730 Patent disclosure is directed would be familiar with digital cell phone design and technology, mobile software platforms, and software development methodologies, and preferably would have experience in innovation processes and consumer technology development. The artisan would have education and familiarity with electrical, industrial, mechanical, or computer sciences, including at least (a) a bachelor's degree with at least three years of experience working in one of those fields, or (b) a master's degree or higher in such a field with at least one year of experience in that field. A person with less education and more relevant practical experience, or more relevant education and less practical experience, may also meet this standard. Mr. Yen is at least a skilled artisan. (Declaration of David Yen, dated Sept. 6, 2019 and filed concurrently herewith ("Yen Decl.") ¶¶ 24-27.)

IV. THE DISPUTED CLAIM TERMS

A. "a central data system for tracking passenger transportation vehicle usage and distributing periodic invoices for that usage"

RideApp's Construction	Lyft's Construction
means-plus-function term	means-plus-function term

"central data system" means "central assignment system combined with one or more databases"	
Function: (1) "tracking of passenger and vehicle for the passenger transportation vehicle usage," and (2) "distributing periodic invoices for the usage."	**Function:** (1) "tracking passenger transportation usage," and (2) "distributing period invoices for the usage," subject to the constructions of "tracking passenger transportation usage" and "periodic"
Essential Structure[3]: (1) A central data system is a central assigning system plus one or more databases. The system includes specific software to support the transit system. The central data system may have distributed architecture. *See* FIGS. 2 & 3, '730 Patent 5:54-6:5. (2) The central data system further includes communication devices, including modems, cellular, and low-power, providing links between the discrete computer(s) of the central system and the passengers and vehicles. '730 Patent 5:54-6:5. **Specially programmed to perform the following:** (3) central data system receives notification message that a user is onboard a vehicle; (4) central data system periodically receives notification message of status information, including the vehicle's position; (5) central data system receives notification message that passengers have left the vehicle; (6) After the passenger is delivered to the passengers destination, the central system bills the passenger for the trip (optionally "as the event occurs," monthly, or with utility bill).	**Structure:** Indefinite, but if not indefinite, the following structure: Function (1): the structure recited in the specification at 5:54-64; 9:3-26; 14:14-19; 16:17-22; Table 1 under "Monitor Status for Vehicle Assignments (Cols. 21-22) Software Element; FIG. 6 (item 504.1); FIG. 8 (items 802, 804, 806, 808, and 810); and Function (2): 5:54-65; 18:4-10; 18:34-39; Table 1 under "Billing and Payment" (Cols. 23-24) Software Element ("Using stored data, the system would periodically, e.g., monthly bill all passengers and pay all drivers. The preferred mode would be billing to utility bill, e.g., the cell phone or pager bill…All of this is done without manual intervention."); FIG. 8 (item 814).

[3] *See* Ex. 2 for a depiction of the algorithm for this claim.

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The essential structure for this claim element must include at least a central data system that tracks the passenger transportation vehicle usage and maintains the tracked information for billing. Yen Decl. ¶ 59. The central data system includes one or more networked computers with specific software to support the entire transit system. Yen Decl. ¶ 59. '730 Patent, 10:23-26; 11:6-8. The system may have distributed architecture. Yen Decl. ¶ 59. *See* '730 Patent, 5:54-6:5 ("portions of the assigning system are distributed among several locations"). Those computers further include communication devices providing links between the discrete computer(s) of the central system and the passengers and vehicles. Yen Decl. ¶ 59. *See* '730 Patent, FIGS. 2 & 4. The central data system is programmed with specific software that performs the described functions. Yen Decl. ¶ 59. '730 Patent, 10:23-26; 11:6-8; FIG. 9 & Table 1.

The central assigning system and database are shown in FIG. 2 (items **205** & **240**) and FIG. 3 (item **340**); s*ee* '730 Patent, 7:27-30, 9:26-35, 10:22-49, 14:33-37, 15:24-26.

The system further includes communication devices, including modems, providing links between the discrete computer(s) of the system and the passengers and vehicles that are capable of sending and receiving messages. Yen Decl. ¶ 60. *See* '730 Patent, 5:54-64. The system is programmed to track passenger transportation vehicle usage. Yen Decl. ¶ 61. *See* '730 Patent, 7:65-8:10 (system tracks all aspects of usage); 15:54-60 (the central data system monitors all passenger information), 7:47-58 (the system monitors passenger and vehicle). The system is programmed to receive notification messages of status information, including the vehicle's position and notification messages that passengers have left the vehicle. Yen Decl. ¶ 61. *See* '730 Patent, 16:34-38.

The system tracks "communications between passengers and vehicles to monitor system usage." Yen Decl. ¶ 62. '730 Patent, 8:4-5. The system is further programmed to distribute periodic invoices for the usage. Yen Decl. ¶ 62. *See* '730 Patent, 5:39-53 (tracking for purposes of billing); 16:17-38 (same).

The written description includes an algorithm for the tracking function that provides corresponding structure for the central data system. Yen Decl. ¶ 63. *See* '730 Patent, FIG. 9 &

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Table 1.[4] The central data system is programmed to receive a communication when a passenger boards a vehicle. Yen Decl. ¶ 63. *See* '730 Patent, FIG. 9 & Table 1 (Monitor Status for Vehicle Assignment & Transit Loading and Configuration). This central data system then writes this information to Update Billing Files, which ultimately is used in the system's Billing and Payment. *See* '730 Patent, FIG. 9 & Table 1. Yen Decl. ¶ 63.

After the previous steps have taken place, the central data system is further programmed to distribute periodic invoices based on usage. Yen Decl. ¶ 64. *See* '730 Patent, FIG. 9 & Table 1 (Update Billing Files & Billing and Payment). Yen Decl. ¶ 64. The written description sets forth numerous methods by which the actual billing can occur. *See* '730 Patent, 5:45 (usage charged through cellular phone bill), 8:32-37 (same) 23:23-34; (automatic billing "like a utility"); 16:30-33 (billing "[o]nce the passenger is delivered to the passenger's destination" with "bill being presented at a designated date"); 18:7 ("utility style billing"); 18:10-12 ("paid automatically by credit card or bank debit"); 18:12-13 ("payment handled through the World Wide Web"); 18:34-36 ("aggregated" billing being sent to user's cell phone); 18:44 ("as the event occurs"); 18:13 ("paid by check in the mail"); FIG. 8 (illustrative billing element).

Mr. Yen considers this to be the corresponding structures for this claims, and trust this term is definite.

B. "a wireless means of on-demand allocation of a passenger to a specific vehicle through the central data system"

RideApp's Construction	Lyft's Construction
means-plus-function term	means-plus-function term
Function: "on-demand allocation of a passenger to a specific vehicle through the central data system"	**Function:** "on-demand allocation of a passenger to a specific vehicle through the central data system"
Essential Structure[5]:	**Structure:**

[4] Figure 9 and Table 1 must be read together. Table 1 describes the algorithms within each module on Figure 9.

[5] *See* Ex. 3 for a depiction of the algorithm for "on-demand allocation."

(1) Central data system with wireless, connectivity. (2) A scheduling processor at the central data system. FIG. 9 & Table 1 (Transit Loading and Configuration & Monitor Status for Vehicle Assignments). (3) A message from a passenger to the central data system to request a trip; Table 1 (Request Shared Trip) (4) A message from central data system to a specific vehicle that identifies the passenger and pick-up location. *See* FIG. 9 & Table 1 (Notify Driver).	Indefinite, but if not indefinite, the following structure: FIG. 6 at items 504.5 and 504.6; 6:55-62; 7:1-7; 7:35-44; 14:47-15:30; 15:35-41; Table 1 under "Find Best Trip" Software Element ("Solves the trip assignment task based on available vehicles, their schedules, and their passenger loadings. Also updates passengers as the trip origination time becomes imminent." (Cols. 21-22)

Essential Structure: The Patent describes "allocation" as the process of **communicating** to vehicles/drivers the passengers, routes, and schedules. Yen Decl. ¶ 67. '730 Patent, 8:3-4 ("**communications to vehicles** to allocate routes, schedules and passengers") 15:24-27 ("Once the routes and methods are determined, the central processing system **allocates** them based on a passenger's parameters.")[6] Here, the claim term is limited to "**allocation** of a passenger to a specific vehicle." Yen Decl. ¶ 67. '730 Patent Claims 2(c) & 3(c); *see also*, id., 7:27-30; 14:25-28 ("The information can be audio, visual, or text data…."); 16:6-8 ("In step **516**, the central assigning system then notifies vehicles and/or drivers of passenger assignments.")

The essential structure for this claim element includes a central assigning system that monitors all vehicles for location, projected future location, in-service status, assigned passengers, driver information, and actual loading by pick-up location. Yen Decl. ¶ 68. '730 Patent, 7:46-52, 9:5-26, 11:62-64, 14:14-16; Table 1 (Request Shared Trip, Transit Loading and Configuration & Monitor Status for Vehicle Assignment); FIG. 9. The central assigning system processes the passenger's trip request to make an assignment. *See* '730 Patent, FIGS. 5 & 6; Table. 1. After the trip is assigned, the scheduling processor at the central data system allocates the assignment

[6] In response to Lyft's Petition for Inter Partes Review, RideApp offered a preliminary construction of "allocation" that included "assignment." PTAB found that Patent Owner sought to add aspects that appear in the embodiments in its preliminary construction of "allocation." (Ex. 1, at 6.) In light of PTAB's Decision, Patent Owner proposes to limit "allocation" solely to its description in the specification.

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to a specific vehicle. *See id.*; *see also* '730 Patent, 15:24-26 ("Once the routes and methods are determined, the central processing system allocates them.…"); 16:6-8. The central data system sends a message to allocate the passenger to the specific vehicle. Yen Decl. ¶ 68. *See* '730 Patent, 7:65-8:6; Table 1 (Notify Driver); 14:33-37 ("The central assigning system can communicate updated passenger and vehicle information directly to vehicles and drivers."); *see also* 9:15-17 ("[t]he data includes…current passenger assignments….").

Mr. Yen considers this to be the corresponding structures for this claims, and trust this term is definite.

Embodiments related to allocation include FIG. 4, a diagram of an embodiment of the transit system. Yen Decl. ¶ 69. Further, FIG. 5 illustrates one embodiment of the operation of a preferred scheduling processor; it includes the step Notify Vehicle of Trip Selection, which is an analogue of the Notify Driver element of the algorithm. *Id.*

C. "a wireless means of informing the passenger of the assignment and updated expected arrival time"

RideApp's Construction	Lyft's Construction
means-plus-function term	means-plus-function term
Function: (1) "informing the passenger of the assignment and (2) "informing the passenger of the expected time at which the vehicle and passenger will meet, including updates to the arrival time"	**Function:** Indefinite, alternatively: (1) "informing the passenger of the assignment," and (2) "informing the passenger of the expected time at which the vehicle and passenger will meet, including updates to the arrival time"
Essential Structure[7]: (1) The central data system, wireless communication devices for sending and receiving messages, and scheduling processor described above. *See* Table 1 (Monitor Status for Vehicle Assignments & Find Best Trip)	**Structure:** Indefinite, but if not indefinite, the following structure: Function (1): FIG. 6 (item 504.7); 7:48-59; 16:6-8; Table 1 under "Notify Passenger, Updates" ("The hand held terminal would display

[7] *See* Ex. 4 for a depiction of the algorithm for this claim.

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(2) Notify Passenger message from central data system to passenger informing of assignment and time of pick-up. *See* FIG 9 & Table 1 (Notify Passenger, Updates). (3) One or more Notify Passenger, Update messages from central data system informing passenger of expected time at which vehicle and passenger will meet, including updates. *See id.*	trip options in order of likely preference. This often would be the only one as there is an obvious best transit option.") (Cols. 21-22); and Function (2): FIG. 5 (item 514); 7:48-59; 11:63-12:3; 15:43-51; 17:6-11; Table 1 under "Notify Passenger, Updates" (It would also display the time of pick-up. If this time of pick-up had uncertainty of greater than some limit, e.g., 60 seconds, then repeated messages, updates, would be sent concerning the chosen trip so that waiting could be minimized.") (Cols. 21-22) and "Report Position" (All vehicles are equipped with locating means, e.g, GPS and periodically report position. During passenger pick-up periods this reporting is frequent so that passengers can be notified of pick-up times with precision, e.g., 60 seconds") (Cols. 21-22) Software Elements.

Essential Structure: Embodiments of the system are illustrated throughout the written description. Yen Decl. ¶ 74. *See* '730 Patent, FIGS. 3, 4, 9 & Table 1 (Notify Passenger). The central data system interfaces wirelessly with the passenger. Yen Decl. ¶ 74. Upon a passenger's request for a trip, the scheduling processor of the system determines the best trip, or a number of options. This process is illustrated in the written description. Yen Decl. ¶ 74. *See* '730 Patent, FIG. 5 (**504**, **506**, **510**, **512**, **514**) & FIG. 6 (**504.7**).

The central data system receives a trip request and the scheduling processor assigns that passenger to a vehicle. Yen Decl. ¶ 75. *See* '730 Patent, 3:56-62 (system matches "a passenger's trip request with current transit parameters to determine vehicle assignment and routes that reduce passenger trip and wait times, wherein the current transit parameters and passenger location are obtained via wireless communication devices optionally capable of transmitting location data"); 7:1-4; 7:28-30. The scheduling processor can conduct the assignment process in any number of exemplified ways. *See, e.g.*, '730 Patent, FIG. 9 & Table 1 (Monitor Status for Vehicle Assignments, Find Best Trips). Once the assignment occurs, the central data system sends a message to the passenger that includes notice of the assignment and the expected arrival time.

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See '730 Patent, FIG. 9 & Table 1 (Notify Passenger, Updates). The system monitors locations of vehicles in order to provide accurate, real-time information on when a passenger will be picked up. Yen Decl. ¶ 75. '730 Patent, 11:63-64; *see also* Table 1 (Report Position). As the system dynamically updates with new passenger and vehicle information, it will update the passenger with revised pickup times if previous pickup times have been modified based on new data. Yen Decl. ¶ 75. '730 Patent, 15:41-46; *see also* FIG. 5 (**510**, **512**, **514**). The central data system is programmed to provide additional messages that update the expected arrival time, with more frequent messages if the arrival is imminent or has been delayed. Yen Decl. ¶ 75. *See id.*; *see also* 7:47-64 ("The scheduling processor of the central assigning system. . . .communicates to the passenger a pickup point (origination site) and estimated or exact time of pick up. . . . More than one communication may be required to update information, particularly the exact time of trip origination."); 14:23-25 ("During passenger pick-up periods this reporting is frequent so that passengers can be notified of pick-up times."). If the time of pickup has an uncertainty of greater than some limit, then repeated update messages would be sent. Yen Decl. ¶ 75. '730 Patent, Table 1 (Notify Passenger, Updates); 11:65-12:3.

D. "a wireless means of detecting the proximity of the passenger and alerting the passenger of the proximity of the vehicle"

RideApp's Construction	Lyft's Construction
means-plus-function term	means-plus-function term
Function: A wireless means of: (1) "detecting when the passenger is within a certain proximity of the vehicle," and (2) "alerting the passenger of the proximity of the vehicle"	**Function:** Indefinite, alternatively: (1) "detecting when the passenger is within a certain proximity to the vehicle," and (2) "alerting the passenger of the proximity"
Essential Structure[8]:	**Structure:**

[8] *See* Ex. 5 for a depiction of the algorithm for this claim.

(1) GPS and digital cellular communications located in passenger hand-held device. *See* 4:56-65; FIG. 9 & Table 1 (Request Trip). (2) Central Assigning System and database. *See* FIG. 9 & Table 1. (3) GPS-enabled device located on the vehicle that periodically detects and reports position. (4) Message notifying passenger of the proximity of vehicle. *See* FIG. 9 & Table 1 (Report Position, Signal Vehicle of Presence).	Indefinite, but if not indefinite, the following structure: Function (1): 5:16-5:29; 11:63-12:3; 14:37-40; 20:30-39; Table 1 – "Signal Vehicle of Presence" Software Element ("When approaching the transit vehicle (or station in the case of rail) the hand held terminal would notify the vehicle that the particular passenger was present and intended to board. This (1) gives the driver assurance that a particular individual is to be on board, and (2) causes the trip to be logged for billing and vehicle loading purposes in the transit assignment system. Correspondingly, the passenger is automatically notified of proximity of vehicle.") (Cols. 21-22); and Function (2): 17:6-11; Table 1 – "Signal Vehicle of Presence" Software Element ("When approaching the transit vehicle (or station in the case of rail) the hand held terminal would notify the vehicle that the particular passenger was present and intended to board. This (1) gives the driver assurance that a particular individual is to be on board, and (2) causes the trip to be logged for billing and vehicle loading purposes in the transit assignment system. Correspondingly the passenger is automatically notified of proximity of vehicle.") (Cols. 21-22).

Essential Structure: The system employs location technology to detect the geographic position of the passenger and vehicle. Yen Decl. ¶ 78. '730 Patent, 8:1-2; 10:45-49; 11:42-45. This is specifically exemplified as GPS technology, although Prof. Dickerson was aware of other technologies that were emerging and could be integrated into his system. Yen Decl. ¶ 78. *See* '730 Patent, 7:65-8:9; *see also* 5:6-25 ("Similarly, the term GPS refers to wireless locating technology that may be based on cellular locating systems known to those skilled in the art."); 5:13-15 (other wireless location technologies); 10:42-48 (same); 11:47-49 (same).

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GPS technology is integral to the claimed system and to performing the claimed functions. "Proximity" requires accurate and updated location information of both the vehicle and passenger. Yen Decl. ¶ 79. The system uses GPS to track the vehicles. Yen Decl. ¶ 79. *See* '730 Patent, Table 1 (Report Position) ("All vehicles are equipped with locating means, e.g., GPS and periodically report position. During passenger pick-up periods this reporting is frequent so that passengers can be notified of pick-up times with precision").

The system dynamically detects and records location and uses location data in its algorithms. Yen Decl. ¶ 80. *See* '730 Patent, Table 1 (Transit Loading and Configuration & Monitor Status for Vehicle Assignments). The algorithms that process trip requests, determine best trips, and perform assignment functions rely on the location data for passenger and vehicle. Yen Decl. ¶ 80. *See* '730 Patent, Table 1 (Transit Loading and Configuration, Monitor Status for Vehicle Assignments, Find Best Trip). The specification teaches that the system monitors location data. Yen Decl. ¶ 80. 16:35-36 ("the central assigning system is periodically notified of status information, including the vehicle's position"). The system relies on location data to determine scheduling, such as time of arrival. Yen Decl. ¶ 80. 7:8-11. ("The central assigning system can dynamically update the schedule of vehicles based both on demand trends and on actual vehicle progress in meeting schedules. Vehicle progress data can be provided by GPS."). The written description provides that the passenger reports information to the system including location information. Yen Decl. ¶ 80. *See* '730 Patent, 7:65-8:10, FIG. 9 & Table 1 (Request Trip). The vehicle's position is tracked. Yen Decl. ¶ 80. *See* '730 Patent, FIG. 9 & Table 1 (Report Position). The central data system will send messages alerting the passenger regarding the proximity of the vehicle. Yen Decl. ¶ 80. *See* '730 Patent, FIG. 9 & Table 1 (Signal Vehicle of Presence) ("Correspondingly the passenger is automatically notified of proximity of vehicle.").

E. <u>"periodic"</u>

RideApp's Construction	Lyft's Construction
Plain and ordinary meaning.	"occurring at regular intervals of time (e.g., monthly), independent of when a trip or segment of a trip is made"

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Consistent with the plain meaning of the word, the patent uses the term "periodic" to mean occurring at regular **or** irregular intervals. Yen Decl. ¶ 83. For example, the patent refers to pollutants "periodically" washed away—not at regular intervals but from time to time upon occurrence of an event. Yen Decl. ¶ 83. *See, e.g.*, '730 Patent, 1:39-40 ("Such pollutants periodically are washed away by rain water…"); *see also* 16:35-36 ("the central assigning system is periodically notified of… passengers who have boarded or left the vehicle"). The patent contrasts "periodic" from "continuous." 9:5-6 ("The evaluation of the data can be periodic or continuous."). The patent also explains that periodic reports may change in frequency. *See* '730 Patent, Table 1 (Report Position) ("periodically report position"). The specification's use of "monthly (or periodic)" shows that periodic is not the same as monthly, though it may include monthly. *See* '730 Patent, 18:55-57 ("Clearly private owners of ride-sharing vehicles and rental cars would receive monthly (or periodic) compensation…"). Even in reference to "periodic billing," the specification states "**perhaps** monthly," but does not limit the claim to monthly or any regular interval. Yen Decl. ¶ 83. *See* '730 Patent, 5:44-45. Rather, the Patent explains that the system can "the system can credit payments received and charge trips taken as the event occurs." Yen Decl. ¶ 84. *See* '730 Patent, 18:42-44. "[P]articular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." *Electro Med. Sys. S.A. v. Cooper Life Sci.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

F. "unified billing"

RideApp's Construction	Lyft's Construction
The preamble is not limiting. Plain and ordinary meaning.	The preamble is limiting. "an aggregation of the trips of a user in one bill statement"

The preamble merely recites the stated objective of providing "a convenient access and billing system for **all modes of travel, shared-ride, mass transit, or car rental** (including taxi) such that the user need not be bothered with cash or tokens but rather receives a monthly billing perhaps as part of the cellular communications bill." Yen Decl. ¶ 88. '730 Patent, 8:32-37. The system "has electronic automatic billing and user ID like a utility for **both ride-shared and rental**

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trips." '730 Patent, 23:23-27. "The same low power transmission capability of item 5 permits automatic billing of passengers in **ride-shared vehicles including mass-transit, and in rental cars.**" Yen Decl. ¶ 88. '730 Patent, 5:36-39. The invention is about incorporating billing into the system to avoid the need for cash payments. *See, e.g.*, '730 Patent, 5:39-44. It seems that "unified" refers to incorporating billing into the central system to enable billing to "be handled in a fully automatic manner." Yen Decl. ¶ 88. '730 Patent, 5:53.

The Federal Circuit has "routinely held that a preamble does not limit claim scope if it 'merely states the purpose or intended use of an invention.'" *Digitech Image Techs., LLC for Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) (finding that preamble "A method of generating a device profile that describes properties of a device in a digital image reproduction system for capturing, transforming or rendering an image, said method comprising" was not limiting).

Moreover, courts normally do not interpret claims in a way that excludes disclosed examples in the specification. *Verizon Services Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1305 (Fed. Cir. 2007). Here, the '730 Patent specifically states that billing can occur in a number of ways: as part of a cellular communications bill (5:45), billing "once the passenger is dropped off" with "bill being presented at a designated date" (16:30-33), "utility style billing" (18:7), "as the event occurs" (18:44), or "aggregated" billing being sent to user's cell phone (18:34-36). Payment also can be made in a number of ways: "paid automatically by credit card or bank debit" (18:10-12), "payment handled through the World Wide Web" (18:12-13), "as the event occurs" (18:44), or "paid by check in the mail" (18:13). Yen Decl. ¶ 89. If the preamble were found to be limited, and if "unified" were construed in the manner suggested by Lyft, then a number of examples would be excluded from the claims, including each of the foregoing. Yen Decl. ¶ 89.

Further, claim 1 identically recites an "automated system for providing unified billing for passenger transport" in the preamble, but then recites in the claim an "automatic means of billing for the use of the vehicle" in the claim—not assembling all charges into a monthly bill. "Unified billing" cannot mean aggregation into one bill statement. Yen Decl. ¶ 90.

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Moreover, nothing in the claim requires more than one trip. Yen Decl. ¶ 91. Thus, the claim cannot require "aggregation" of multiple trips into one bill statement. *Id.* As the specification explains, automatic billing in the invention can be "as the event occurs." Yen Decl. ¶ 91. '730 Patent, 18:23-44. The plain meaning of "unified" is "brought together as one." Yen Decl. ¶ 91. Thus, the preamble recites that the billing for passenger transport is brought together as one in the automated system—not that the billing itself necessarily brings together multiple charges as one. Yen Decl. ¶ 91.

G. "tracking passenger transportation vehicle usage"

RideApp's Construction	Lyft's Construction
"tracking of passenger and vehicle for the passenger transportation vehicle usage from the initial request until arrival at the final destination"	"continuously tracking both the passenger and vehicle from the initial request until arrival at the final destination to monitor vehicle usage"

The patent describes "real-time" command and control. Tracking of the passenger transportation vehicle usage would begin when the usage begins. Yen Decl. ¶ 93. "The passenger can select the trip of an alternative by using a single key on a cellular phone, which may be one of several alternatives presented and may include a request for additional alternatives or data, **wherein at this point, the central assigning system is monitoring all key presses and information transmitted from the passenger's communication device**." Yen Decl. ¶ 93. '730 Patent, 15:54-60.

The '730 Patent amply discloses that the central data system engages in "tracking" passenger transportation vehicle usage. That feature provides many of the benefits sought by the invention. The system "provides real-time command and control of passengers and vehicles…." Yen Decl. ¶ 94. '730 Patent, 6:6-10. The system "monitors each passenger's and vehicle's information, and then communicates to the passenger a pickup point (origination site) and estimated or exact time of pick up." Yen Decl. ¶ 94. '730 Patent, 7:47-53. The tracking occurs through the central data system, which monitors and records the passenger transportation vehicle usage. Yen Decl. ¶ 94. '730 Patent, FIG. 9 & Table 1 (Monitor Status for Vehicle Assignments).

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For this purpose, the Monitor Status feature interfaces with all of the essential elements of the invention, thereby accessing vehicle data, position, loading; receiving passenger trip request, interfacing with the assignment system, and sending notifications to the passenger; and with the billing function to transmit the usage data on which billing is based. Yen Decl. ¶ 95. *Id.*

Lyft asks the Court to import the limitation that tracking occur "continuously" but fails to explain why importing this new limitation is proper. Prior art "taxi dispatch" systems such as those cited by Lyft in the IPR receive a request, make an assignment, communicate the assignment, then disengage from the transportation usage. In contrast, the '730 Patent continues to perform command and control over the passenger transportation vehicle usage until the trip is over, then bills for that usage. But the disclosed system is digital, and nothing digital performs "continuously" in the sense that Lyft seems to intend. Yen Decl. ¶¶ 96-97.

Lyft's construction reads in a requirement for "continuous" tracking. The claim contains no such requirement. Yen Decl. ¶ 96. Moreover, "continuous" is unclear in this context. A person of skill in the art would understand that reports of position would necessarily include reports of position would necessarily include discrete reports in view of the nature of digital communications. Yen Decl. ¶ 97.

H. "wireless communication between passengers, vehicles, and the central data system"

RideApp's Construction	Lyft's Construction
Plain and ordinary meaning means "communication transmitted/received using wireless communication devices between each of passengers and vehicles/drivers, passengers and the central system, and vehicles/drivers and the central data system"	"(1) wireless communication directly to and from the central data system and passengers, (2) wireless communication directly to and from the central data system and vehicles, and (3) wireless communication directly to and from vehicles and passengers"

The central data system includes wireless communications between the passenger, vehicle, and the central data system. Yen Decl. ¶ 100. '730 Patent, 3:17-20 ("hand-held devices" means "cell phone"). The Patent is rife with disclosures about the importance of this feature in

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the operation of the system. Yen Decl. ¶ 100. '730 Patent, 11:20-33; 14:33-35; 16:17-33; 20:25-39. A principal aspect of the invention is the wireless "integration" of these system with passenger and vehicle "provides real-time command and control of passengers and vehicles…." Yen Decl. ¶ 100. '730 Patent, 6:6-10. As discussed above, many of the other features of the invention arise from this wireless communication architecture, including "tracking," "allocation," messaging, and "billing." *Id.*

Lyft asserts that the Court should read in a limitation requiring that all communications be "direct," in particular that there be "wireless communication directly to and from vehicles and passengers…." Yen Decl. ¶ 101. Requiring direct communication between passenger and vehicle would undermine the "command and control" feature of the Patent. Yen Decl. ¶ 102. '730 Patent, Abstract. Neither the Patent nor the specification includes such a requirement, and the specification teaches none. Indeed, many of the "communications" disclosed in the Patent are exchanges of data or messages to, from, or through the central data system. Yen Decl. ¶ 102. '730 Patent, FIG. 9 & Table 1. Throughout the specification, Lyft's disclosures of "direct" communication are communications with the central data system. Yen Decl. ¶ 102. '730 Patent, 9:31-35 ("direct" between system and database); 14:33-35 (system and vehicle); 16:41-44 (system and vehicle); 17:51-53 (system and passenger); Table 1 (Signal Vehicle of Presence).

As noted above, the Patent discloses a central data system that "provides real-time command and control of passengers and vehicles…." Yen Decl. ¶ 103. '730 Patent, 6:6-10. The system "monitors each passenger's and vehicle's information, and then communicates to the passenger a pickup point (origination site) and estimated or exact time of pick up." Yen Decl. ¶ 103. '730 Patent, 7:47-53. The claimed system monitors and evaluates even communications between passengers and vehicles as part of its tracking of passenger transportation vehicle usage. Yen Decl. ¶ 103. *See* '730 Patent, 7:65-8:10 ("The data interpreted and evaluated by the central assigning system can include: . . . . (4) communications between passengers and vehicles to monitor system usage").

Further, none of Lyft's citations to the specification support such a construction or use the word "direct." Yen Decl. ¶ 104. *See* '730 Patent, 3:4-7 ("it is inexpensive to communicate to

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and from people, vehicles, and traffic controls…."); 4:9-14 (communication "to and from passengers, vehicles and the central assigning system"), 4:57-67 & 5:4-19 ("low power" communication to unlock rental car); 7:65-8:10 (passengers and vehicles "to monitor system usage"); 10:50-11:5 (low-power "short range" communication); 11:22-35 (not "direct"); 20:28-36 (short-range). In any event, even if the Court were to adopt Lyft's construction reading in a requirement of communications directly to and from vehicles and passengers, communications from a passenger to a vehicle through the central data system could be considered direct communication. Yen Decl. ¶ 105. All digital communications pass through intermediary networks and can include signals that pass through intermediary servers or bouncing signals off cell towers or satellites. Yen Decl. ¶ 105. *See* '730 Patent, FIG. 4; Thus, while it is unclear what Lyft means by "direct," no conventional understanding of the term in the context of modern communications excludes "direct" communications between passenger and vehicle occurring through the system.

Lyft fails to explain why the claims should require "direct" communication, and the Court should reject this construction.

I. "proximity"

RideApp's Construction	Lyft's Construction
"distance; geographical closeness"	Plain and ordinary meaning or, alternatively, "nearness in space or time," subject to the construction of the means-plus-function term above

The '730 Patent explains at length that the central assigning system uses location data reported by the vehicle and automatically transmitted by the passenger to determine transportation assignments. Yen Decl. ¶ 108. *See* '730 Patent, 14:14-15:51; 16:34-38. Similarly, the central data system will alert the passenger when the passenger and vehicle are a certain distance apart (at a "range of about 1 mile to about 30 feet"). Yen Decl. ¶ 108. *See* '730 Patent, 17:4-11. The system could also alert the passenger when the estimated time of arrival is imminent. Yen Decl.

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¶ 108. *Id.* (noting that the "time" calculation would require the system to engage in "calculations"). In the context of car rental, the system alerts when the passenger "is in proximity to the vehicle [so] the doors can be unlocked…." Yen Decl. ¶ 108. '730 Patent, 17:46-51; *see also* Table 1 (Signal Vehicle of Presence) (notifies vehicle and passenger as they approach the other).

Lyft seeks to construe the term "proximity" to relate to time. Yen Decl. ¶ 111. This does not comport with the written description, which clearly sets forth the use of location technology (GPS), and which further explicitly refers to "proximity" in the context of physical presence. Yen Decl. ¶¶ 109, 111. *See* '730 Patent, FIG. 9 & Table 1 (Signal Vehicle of Presence).

When the specification refers to "proximity," it means distance. Yen Decl. ¶ 109. *See, e.g.*, '730 Patent, 17:49-51 (When the passenger/renter is in proximity to the vehicle, the doors can be unlocked…."); Table 1 (Signal Vehicle of Presence) ("When *approaching* the transit vehicle…the hand held terminal would notify the vehicle that the particular passenger was *present*…."). When the patent is referring to time, it says so. Yen Decl. ¶ 110. *See, e.g.*, '730 Patent, 7:55 ("the expected time of arrival"); 13:10-11 ("expected times of pick-up"); 13:31 ("Display of expected times of pick-up"); 14:24-25 ("so that passengers can be notified of pick-up times"); 15:41-42 ("The system in step **512** then updates the pickup times"); 15:44 ("revised pickup times"); Table 1 (Notify Passenger, Updates) ("If this time of pick-up had an uncertainty of greater than some time limit, e.g., 60 seconds, then repeated messages, updates, would be sent concerning the chosen trip so that waiting could be minimized.").

Of course, even if "time" were to be imported into construction of "proximity," the patent provides that the central data system calculates arrival time. '730 Patent, 17:8-11.

V. CONCLUSION

For the foregoing reasons, the Court should reject Lyft's proposed claim constructions and adopt those set forth in RideApp's Opening Claim Construction Brief.

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